

DEPARTMENT OF FOOD AND AGRICULTURE

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Mr. Paul Dabbs
Department of Water Resources
Statewide Planning Branch
1416 Ninth Street, P.O. Box 942836
Sacramento, California 94236-0001

Re: Comments on the September 20, 2003 Draft California Water Plan Update,
Bulletin 160-03

Dear Mr. Dabbs:

Thank you for the opportunity to comment on the Draft California Water Plan Update, Bulletin 160-03. The importance of this edition of the State Water Plan on California's water future cannot be overemphasized. If done right, it will provide a strong technical foundation for the California Bay-Delta Program and for many regional and local efforts to plan and implement actions necessary to secure California's water future. I commend you and your staff for conducting such an open, stakeholder-based process to guide the preparation of this report. It is apparent that there is no silver bullet that will solve California's water supply dilemma. A mix of strategies will be required.

As a representative of the state agency charged with preserving, protecting, and enhancing California agriculture, I must point out that agriculture is and will remain the major user of the developed water in California. An adequate, reliable, affordable, high quality water supply is the life-blood of agriculture. Thus, an accurate comprehensive planning document such as Bulletin 160-03 will be a very useful tool as we work to meet the water needs of all Californians.

Agriculture is also an integral part of the environment and provides multiple benefits over and above the production of food, feed, fiber, energy and chemicals. Agriculture provides open space, wildlife habitat, flood protection and watershed benefits. As farmers learn more, they are becoming increasingly better stewards of the natural resources - land, water, air, biological, upon which they depend.

I would like to highlight several key issues discussed in the report, and provide a few suggestions as to how the report might provide additional information, thus enhancing its usefulness.

My review of the draft compels me to comment on the poor quality of the composition of the document to this point. I started providing editorial comments, but soon gave up. The task was simply overwhelming. I am also aware and support the Ag Caucus recommendation that the draft also be edited for readability. I trust that experienced technical writers and editors will be called upon to bring the public review draft up to the high quality we've come to expect from DWR.

Executive Summary:

A key issue missing from the Executive Summary is the concept of water supply reliability (WSR) and its nexus to drought preparedness, especially during a multi-year drought. Different levels of reliability require different levels and types of investment. The discussion of WSR must also take place in the context of different water year types and in a regional context.

Another key concept not mentioned in the Executive Summary is the hardening of demand as urban and agricultural water users continue to implement new water use efficiency measures. Shifting to higher value trees, vines and truck crops by the agricultural sector and enforcing environmental and water quality regulations will increase this hardening of demand, while simultaneously tightening supplies.

Please note that Finding 7 appropriately notes an urban water use trend. Similarly, Findings 10 and 11 would provide more useful information if they also quantified the amount of water dedicated to environmental flows and the amount applied or consumptively used by agriculture since last reported in Bulletin 160-98 (or some other reference point).

The third and fourth recommendations are findings, rather than recommendations.

The Investment Guide table does not adequately reflect the uncertainty in the numbers presented in the Potential Water Benefits by 2030 column. Ranges should be presented for each resource management strategy. Furthermore, while DWR staff and management have consistently stated that it is not appropriate to sum the potential water benefits, the third and fourth recommendation bullets in the Executive Summary do just that. This apparent inconsistency should be rectified. Several resource management strategies that are not presented in the table (some are relegated to the note and small table at the bottom of the page) should be included. Conveyance, other storage projects and watershed management are examples. Finally, the Ag Caucus 09/26/2003 draft Implementation and Investment Guide table may be a more appropriate way to convey this information.

Chapter 1 - Overview:

The first paragraph under Balanced portfolio of water management does not include quantification for dedicated environmental use. This use is one of three major use categories, along with urban and ag. It should be listed as well as the others.

The paragraph near the top of page 1-3 on ag water use efficiency appropriately referenced improvements in efficient use of water in the ag sector, but does not quantify how water supplies may benefit in the future. Other paragraphs in this section do attempt quantification, shouldn't this one?

In the middle of the same page, "...~~human~~ urban, agricultural and environmental water demands..." Agricultural water use is also a human use of water.

Again, the discussion on this page (1-3) relies on a summing of the resource management strategies, which may not be appropriate. That being said, the discussion states that 6 – 8 MAF are identified with high to medium implementation confidence, with 3 – 4 MAF coming from WUE and recycling. However, the discussion fails to identify where the other 4 – 5 MAF may come from. The discussion of lower implementation confidence strategies should start a new paragraph.

The table on page 1-6 (Regional Benefits of RMS) does not add value, and is ambiguous. There is no discussion that accompanies the table. A short discussion could help.

The discussion of where there is agreement and disagreement on page 1-11 is deficient in that there is no mention of conveyance at all. This is currently a huge issue as the south Delta Improvements discussion exemplifies. Also, it should be stated that there is no consensus on the relative contribution of each of the strategies in forming a balanced portfolio.

Chapter 2: California Water Today

This Chapter does not present a clear picture of water supply and use in the state today. The discussion of Existing statewide water uses and supplies is only about a page, but most of that page is spent on how information is to be presented rather than presenting the information. The only statement of current conditions is in the first brief paragraph. The first paragraph should be reorganized, stating the most significant issues first, then moving through lesser issues and finally areas of relatively minor concern. Then each succeeding paragraph should provide some detail on each of the issues mentioned in the first paragraph. Finally, each issue of concern should be addressed by water year type as well.

The discussion on water management roles and how water is allocated and regulated was very useful. About the same amount of space should be dedicated to discussing the current status of water supply and use.

Challenges:

Population growth and water demand – Is the projection to 2020 or 2030?

Reliability of irrigation water – There is also reallocation from ag to urban uses as well as to environmental uses. This discussion should also include increased hardening of demand resulting from the shift to trees and vines and higher value vegetables and fruits, and increased WUE.

Chapter 3: Planning for an uncertain future

The section on the future of California agriculture and food is essentially a restatement of the Draft Ag Issues Center (AIC) Interpretation and Analysis Responsive to AB 2587. This should at least be acknowledged in the document.

Please see the comments below regarding the AIC draft document presented directly below:

“Anyone who believes exponential growth can go on forever in a finite world is either a madman or an economist.” - Kenneth Boulding

While 2030 is not forever, it is a sufficiently long planning horizon that uncertainty in assumptions made in the analysis presented by the authors should be disclosed and incorporated into the final report. A sensitivity analysis of the key driving factors should be performed. An additional factor should be added – availability and cost of fossil fuel inputs (diesel fuel, fertilizer, crop protection materials).

a. Agricultural land conversion – There is no differentiation made between farmland and grazing lands. The DOC differentiates between farmland and grazing land. The focus here should be on farmland – prime, of statewide importance, unique and of local importance, of which there is 8.4 million irrigated acres and 3 million non-irrigated. There are another 14 million acres of grazing land. The bulk of the land converted to non-ag uses is irrigated lands. This section focuses on land converted to urban uses. Other actions that convert ag land are not mentioned but should be – retirement of “drainage impaired” lands, retirement of land to effect water transfers, conversion of land to groundwater spreading basins, and conversion of land to wildlife habitat.

Multiple crops – What is the basis for predicting an increase in multiple cropping (offset by urban conversion)? How large or small a factor is this? Where will/can it take place?

What is the practical limit? Will an ag water supply be available to support this? For which crops?

b. Climate Change – There are many conflicting predictions for the impact of climate change on ag production. This uncertainty is not acknowledged in the analysis. As an example, some scenarios predict that the vegetative portions of plants may indeed show higher yields; however, the fruiting portions of plants may exhibit lower yields. More unpredictable weather patterns may result in poorer quality, increased disease and insect damage and generally reduced yields.

A fundamental flaw in the analysis is the failure to ground the economic analysis to state, national and global resource trends including amount and quality of arable land and irrigation water, energy resources, and other global climate change considerations, and then relating these trends to state, national and global population trends.

William Jury, UC Riverside professor of soil physics, is identified as one of the world's 100 most frequently cited engineering and environment researchers. He provided data at a recent conference that indicated food for 480 million people is being grown on land that is running out of water.

"The food crisis is already starting to unfold and it is being driven to a great extent by water," said Jury. He added that the world's per-capita supply of grain has fallen dramatically from its peak in 1983. "We are currently feeding about one-half a billion people with water that won't be there in the future."

Recently, the US Department of Agriculture reported that if Americans were to follow a healthy diet, nearly twice the number of acres of fruit and vegetables would have to be planted. What would the acreage requirement be for California to continue to supply the US with this healthy diet? Some dietary changes are included in the analysis, but a range that captures the uncertainty of the forecast would be appropriate. This information should be incorporated into the forecasting methodology to help determine the range of uncertainty.

Global fossil fuel production has also fallen on a per capita basis during about the same time frame.

These are examples of factors that must be considered in any analysis of future food production capabilities.

The discussion of the future of agriculture in this chapter should not rely on one analysis. DWR staff, in consultation with CDFA should undertake further review of the

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AIC report and also review existing natural resource and population trend analysis to look at this issue from more than merely economic terms.

Chapter 5: Resource Management Strategies

Agricultural Water Use Efficiency

At this point RDI is quite speculative and should not be given the prominence in the report that it currently enjoys (two pages out of 13 pages of text). After all, this is a low implementation confidence strategy. RDI is discussed in several places. Not one of those discussions includes other evaluations of the uncertainties of the long-term effects to crops under RDI. The uncertainties and the need for research are acknowledged at the end of the discussion on page 5-18, but no review of existing information is provided.

Under reducing evapotranspiration, another management tool is weed management, both for irrigated crops, but perhaps more importantly on rangeland and in the upper watershed. One study estimates that eradicating yellow starthistle could reduce unproductive ET by about 1 MAF while also providing significant economic and ecological benefits.

There should be a short discussion of energy trade-offs embodied in moving to more efficient irrigation technologies (the need for pressurized systems).

The section on conveyance does not mention the Isolated Conveyance Facility as evaluated in the CALFED alternatives and discussed on pages 28 and 29 of the Record of Decision. Within a 30-year planning horizon, it should still be discussed in B-160.

Thank you again for the opportunity to comment.

Sincerely,

Steve Shaffer
Director
Office of Agriculture and Environmental Stewardship